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Arizona Corporation Commission  
1200 W. Washington  
Phoenix, AZ 85008

Arizona Corporation Commission

DOCKETED

OCT 25 2004

October 25, 2004

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Subject: Responsive/Clarifying Testimony of Arizona Cogeneration Association.

Docket No.E-01345A-03-0437

Dear Sir or Madam:

Attached is the Testimony for the Arizona Cogeneration Association. If you have any questions please call me on the number listed below.

Sincerely:

William J. Murphy P.E.  
Vice President of the DEAA.

**RESPONSIVE/CLARIFYING TESTIMONY OF  
WILLIAM J. MURPHY**

**On behalf of the the Arizona Cogeneration Association, DBA  
Distributed Energy Association of Arizona (DEAA)**

**Docket No. E-01345A-03-0437**

**October 25, 2004**

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1 **RESPONSIVE/CLARIFYING TESTIMONY**

2  
3  
4  
5 **DID YOU DISCOVER ANY TESTIMONY THAT ADDRESSED**  
6 **YOUR CONCERNS ABOUT THE INCREASING IMPORTANCE OF**  
7 **NATURAL GAS INFLUENCED COSTS OF ELECTRICITY VOICED**  
8 **IN YOUR TESTIMONY?**

9  
10 **One Company witness showed understanding of the major economic**  
11 **change in that have occurred in the last 13 years. Mr. Robinson**  
12 **discussed the impact of natural gas on generation costs. (P.3 lines 2 thru**  
13 **22)**

14  
15 **“As the Company explained in detail in the PSA proceeding (Docket No.**  
16 **E01345a-02-0403) and in the rebuttal Testimony filed by myself and**  
17 **Mr. Ewen in this proceeding, APS is increasingly dependant on natural**  
18 **gas, both to run its own generating facilities and through its rapidly**  
19 **increasing dependence on purchased power, which is predominately**  
20 **gas-fired. For example, as we explained in the Rebuttal Testimony,**  
21 **between 2991 (the year following the Company’s last full blown general**  
22 **rate case) and 2005, APS’ energy needs from natural gas will have gone**  
23 **from 9% to approximately 28%. As a result, gas and purchased power**  
24 **will constitute 56% of the Company's total fuel and purchased power**  
25 **expenses by 2005, the first full year for which the proposed PSA will be**  
26 **effective. And fuel and purchased power expense will have gone from**  
27 **constituting 33% of all APS operating expenses in 1991 to almost 50%**  
28 **in 2005.**

29  
30 **At the same time that APS is becoming more dependant on natural gas**  
31 **and purchased power, prices for both have become more volatile. As**  
32 **explained in my Rebuttal Testimony and in the Rebuttal Testimony of**  
33 **Mr. Ewen, for example the average price for delivery at the San Juan**  
34 **Basin has ranged from \$1.40 per MMBTU to \$10.61 per MMBTU since**  
35 **1998. At the Social Border, the gas price has ranged from \$1.40 per**  
36 **MMBTU to \$59.42 per MMBTU during the same time frame. Both**  
37 **APS’ increasing dependence on natural gas and increasing volatility of**  
38 **natural gas prices clearly require.....”**  
39

1 Mr. Robinson goes on to recommend the plan to transfer 90% of these  
2 increased costs and risks to the customer, by means of the Power Supply  
3 Adjustment (PSA).

4  
5 I would like to call your attention to this fact. The existing rates  
6 referred to by Mr. Robinson – were approved by the ACC in the  
7 “Company’s last full blown general rate case” in 1990.

8 In 1990 the cost of natural gas was very low and the percentage of  
9 natural gas included in the total fuel mix was very low. At that time  
10 natural gas was not an issue, with the result that rates did not focus on  
11 natural gas’ influence on customers rates. The rate designs that were  
12 approved by the ACC in 1990 are still in effect today. But there was no  
13 PSA. The Settlement Rates proposed do not begin to address today’s  
14 natural gas influence on customers rates, worse, the PSA has the effect  
15 of transferring 90% of these costs to customers in a manner that masks  
16 the impact of these increasing costs. Even if natural gas prices do not  
17 rise or decline slightly, the influence of the gas costs will rise because  
18 almost all of future growth will be met with gas turbines.

19  
20 But this transfer of costs to the customers won’t be done in such a way  
21 that customers will recognize and easily respond with lower energy use.  
22 No, these increased costs will be converted to prices that will be sprayed  
23 like paint over all kWh. A small increase for all customers.

24  
25 The attached graph of APS Load curve (Exhibit WJM-2) attempts to  
26 present in a visual manner the future impact of these increased gas costs  
27 on customers.

28 What the curve illustrates is that by next year almost all incremental  
29 energy used at almost every hour will be provided by natural gas. The  
30 most expensive of this energy is needed on the “critical peak”. These  
31 prices of this summer peak easily exceed the 2¢/kWh that is in the  
32 current base.

33  
34 This energy will cost the company over 5¢/kWh+, but this customer will  
35 only pay 2¢/kWh with the remainder being spread (like paint?) over all  
36 other customer’s bills who did not cause these costs!

37  
38 This is one of the issues that we believe should be corrected – the need to  
39 communicate these high on-peak costs to the customers with prices so  
40 they can understand and react.

1  
2  
3 **WHY IS THE DESIGN OF RATE E-32 OF SUCH GREAT INTEREST**  
4 **TO THE ARIZONA COGENERATION ASSOCIATION?**

5  
6 **Rate E-32 is the key element in almost all rates that are available for**  
7 **General Service customers who would choose to generate all or a**  
8 **portion of their own electricity utilizing renewable and other methods of**  
9 **self-generation.**

10 **This includes E-32R, Frozen E-51, and E-52, which include this complex**  
11 **rate as a major part of the charges the customer faces.**  
12

13  
14 **WHY WAS THE RATE DESIGN OF E-32 CHANGED AS A RESULT**  
15 **OF APS PROPOSALS AND THE SETTLEMENT AGREEMENT?**  
16

17 **As I stated in my Original Testimony the “expanding block” in the**  
18 **existing rate is in my experience, not well understood by most**  
19 **customers. The existing “expanding block” is established in the rate is**  
20 **as follows:**

21  
22 **SUMMER - “\$0.10201 per kWh for the next 100 kWh per kW over 5”**  
23

24 **I do not believe most GS customers do not understand the difference**  
25 **between kW and kWh. Obviously they will struggle wit a charge that**  
26 **includes both together.**

27  
28 **Now the Settlement Agreement on page 23, paragraph 121 we quote:**  
29 **“: Schedule E-32 has been modified in an effort to simplify the design, to**  
30 **make it more cost based, and to smooth out the rate.....”**  
31

32 **The Company and some interveners have echoed the claim the**  
33 **Settlement rate is simpler.**  
34

35 **Of all of APS rates that we know of there is only one rate (E-32) that**  
36 **includes an “expanding block”. I believe that this “expanding block” is**  
37 **complex and very difficult to understand. These 2 new “expanding**  
38 **blocks” in the new Settlement rates will effects all GS customers over 20**  
39 **kW (bigger than a Starbucks)**  
40

1 Settlement E-32  
2 Summer - 1<sup>st</sup> 200 kWh/kW \$0.07938  
3 - Over 200 kWh/kW \$ 0.04175  
4  
5

6 Unfortunately the changes in the Settlement include doubling the  
7 number of expanding blocks.  
8

9 Also the Settlement rates include 3 steps in the Demand charges vs. 1  
10 step in the existing rates.  
11

12 Additionally, the Customer charge goes from a simple \$12.50/month to  
13 2 different charges - \$0.575/day – or \$1.134/day. If the customer is  
14 trying to calculate his own bill (some try!) he/she will have to know the  
15 number of days in the billing cycle. (Clue-- there are 30.416666 days in  
16 an average month)  
17

18 To assist in determining the relative simplicity (complexity?) of the  
19 existing vs. the Settlement E-32 we have included Excel worksheet,  
20 (Exhibit WJM-3) titled “simpler” that compares the existing E-32 with  
21 the 2 new Settlement E-32 versions (The under 20 kW, and the over  
22 20kW)  
23  
24

25 **WHY ARE YOU CONCERNED ABOUT THE DESIGN OF E-32 AND**  
26 **E32R, AREN'T THERE OTHER RATES THAT CAN BE USED BY**  
27 **CUSTOMERS WHO WANT TO GENERATE THEIR OWN**  
28 **ELECTRICITY?**  
29

30 Yes, there are other rates: E-32R, E-51, & E-52.

31 The rate design philosophy that is in E-32 rate discussed above is also  
32 utilized as a key pricing mechanism in these other rates(E-32R, E-51, &  
33 E-52). Customers who want to generate their own electricity must have  
34 fair Partial Requirement Rates (PRR) to make DG economic.  
35  
36

37 **DID YOU AGREE WITH THE MANNER IN WHICH THE STAFF**  
38 **WITNESS JOHNSON CHARACTERIZED THE POSITION OF OUR**  
39 **ORGANIZATION WITH REGARD TO RATE DESIGN?**  
40

1 **Mr. Johnson in his testimony on p.4 line 12 stated the “it is my**  
2 **understanding that the ACA believes that certain rate structures**  
3 **contained within the agreement do not encourage distributed**  
4 **generation.”**

5  
6 **Our position is that the proposed Settlement rates actually, and actively**  
7 **discourage distributed generation.**

8  
9 **DO YOU AGREE WITH MR JOHNSON’S COMMENTS THAT THE**  
10 **ACA HAD AN OPPORTUNITY TO DISCUSS ITS ISSUES AND**  
11 **HAVE THEM CONSIDEREED.**

12  
13 **Yes, as Mr. Johnson stated on p. 4, lines 17 &18, the ACA’s positions**  
14 **were seriously considered by the Staff.**

15 **But, most interveners’ response reminded us of an observation by**  
16 **Upton Sinclair:**

17 **“It is difficult to get a man to understand something when his salary**  
18 **depends on his not understanding it”**

19  
20 **WERE YOU SATISFIED BY THE SOLUTION TO YOUR ISSUES**  
21 **THAT WERE INCLUDED IN THE PROPOSED SETTLEMENT?**

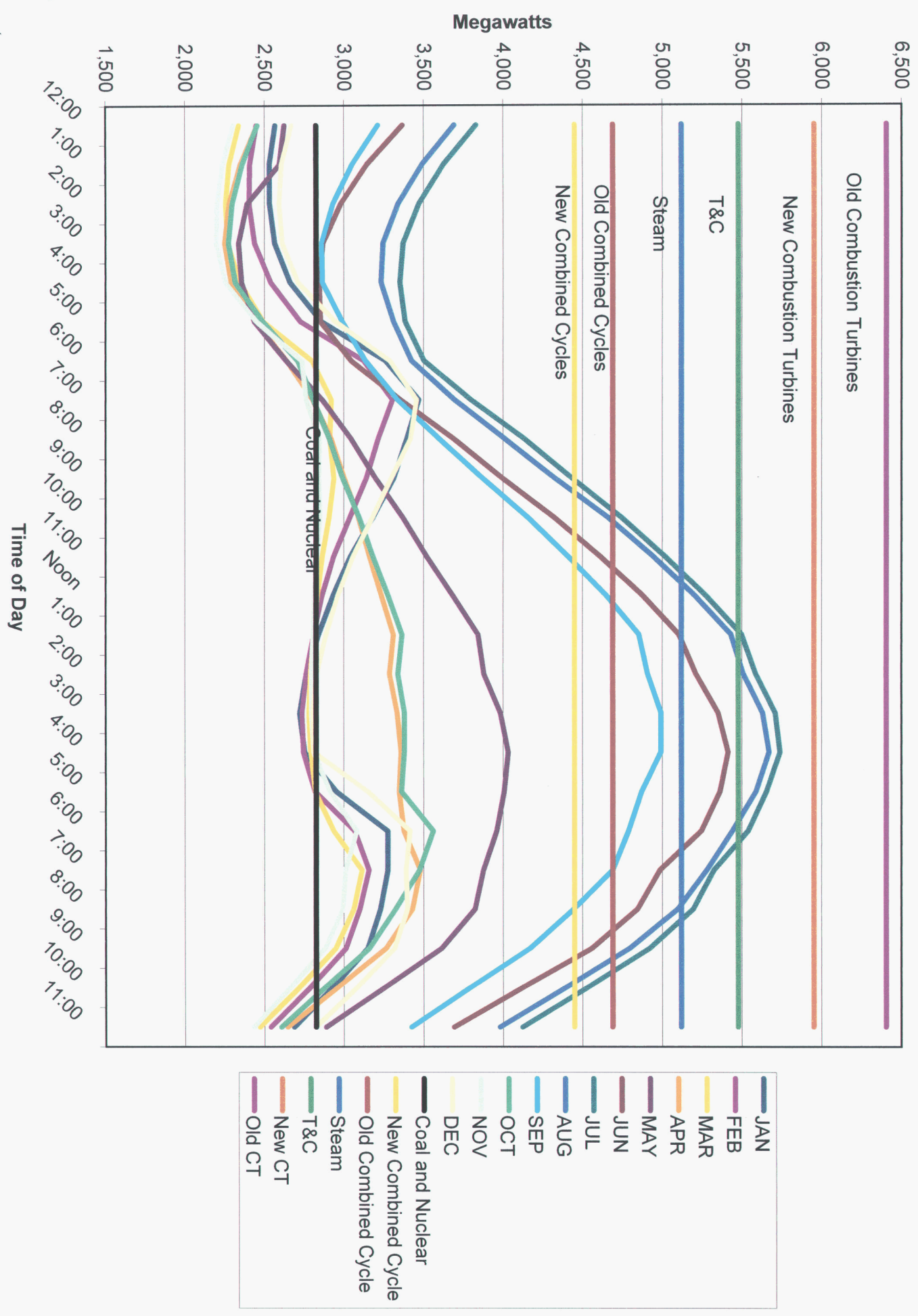
22  
23 **As mentioned by Mr. Johnson on p.4 lines 23 thru 26, Section XVII of**  
24 **the Proposed Settlement does include a proposed workshops, and, “if**  
25 **necessary, the workshops may be followed by rulemaking”.**

26  
27 **Our experience with ACC/APS distributed generation workshops is that**  
28 **those who want fair and objective PRR have been overwhelmed and**  
29 **discourage by efforts of those who oppose any significant amount of DG.**

30  
31 **We previously entered into the workshops with the belief that the best**  
32 **arguments would prevail. What we learned is that perseverance in**  
33 **holding and advocating positions by professional advocates can**  
34 **overcome unpaid volunteers.**

35 **What we want is the Commission to intercede and establish ground**  
36 **rules and a schedule for workshops, hold hearings, and then establish**  
37 **firm rules on this important issue.**

2005 Monthly Average Load Curve (3.5% growth) with Dispatch Order



## SIMPLER

SIMPLIFIED REVIEW OF THE COMPLEXITY OF E-32 RATES  
SUMMER PRICES ONLY SHOWN

Exhibit WJM-3

ENERGY				CUSTOMER SERVICE	DEMAND
=====				=====	=====
EXISTING E-32	1ST BLOCK 1st 2500 kWh	2ND BLOCK EXPANDING 100kWh/kWh	3RD BLOCK next 42,000 kWh	4TH BLOCK all additional	CUSTOMER SERVICE
	\$0.10201	0.10201	\$0.06989	\$0.04403	\$12.50
					\$1.70
=====					
SETTLEMENT E-32					
UNDER 20 Kw	1ST BLOCK 1st 5,000 kWh	2ND BLOCK over 5,000 kWh	3RD BLOCK	4TH BLOCK	CUSTOMER SERVICE
	\$0.09892	\$0.04711	NONE	NONE	Self-contained meter \$0.575 /day Instrument rated meter \$1.134 /day
					DEMAND CHARGE (Over 5 kw) NONE
=====					
SETTLEMENT E-32					
OVER 20 Kw	1ST BLOCK EXPANDING 200kWh/kWh	2ND BLOCK EXPANDING OVER 200kWh/kWh	3RD BLOCK	4TH BLOCK	CUSTOMER SERVICE
	\$0.07938	\$0.04175	NONE	NONE	Self-contained meter \$0.575 /day Instrument rated meter \$1.134 /day
					DEMAND CHARGE (Over 5 kw) FIRST 100kW \$7.722 NEXT 400kW \$2.877 OVER 500 Kw \$2.877
=====					
Plus complexity added by voltage discounts					
=====					
Plus complexity added by customer choice issues					
=====					